

What is claimed:

1. A method for breeding of a variety of Pacific abalone with orange shell, is conducted in the following steps of: 1) Individuals of moderate or large size in the broodstock are chosen as breeders. The breeders are subjected into 16~20°C seawater with a stocking density of 25~80 individuals per m³. Appropriate macroalgae are given daily. The tank-whole water is exchanged and the gentle aeration is provided every day. The light level is controlled to be 20~100 Lux. When the effective cumulated temperature gets to 900~1400 °C·Days, the gonad of the breeders will develop into ripeness; 2) The fully mature breeders are artificially induced to spawn by combined desiccation, thermal shock and exposure to UV-irradiated seawater. The detailed operations are: with desiccation for 60~120 minutes at the temperature of 18~20 °C and the humidity of 50~90% in the hatching room, the breeders are separated strictly in terms of sexes, and then individually immersed in UV-treated filtered seawater in different containers. The seawater are replaced at a temperature of 22~23 °C and treated with 300~1000mwh/L Ultra-violet. The breeders eventually release gametes within 40~90 minutes after seawater exchange; 3) The produced eggs and sperms are artificial fertilized by means of single mating or mass-cross mating respectively; 4) A routine procedure used for embryonic, larval and spat rearing is conducted, and then a new abalone strain with identical orange shell color is established. The characteristic is that, the broods are selected from mature natural geographic stocks or cultivated stocks with orange shell color. The new Pacific abalone strain is established by single mating or mass-cross mating of the variants with orange shell color, which is new strain of identical shell color trait.

2. The method for breeding of a variety of Pacific abalone with orange shell, according to the claim 1, characterized in that the said step 2), the spontaneous conditioning of the broodstock for gametes release is also feasible.

3. The method for breeding of a variety of Pacific abalone with orange shell, according to the claim 1, characterized in that the said step 3), no gamete or insufficient gametes release may occur after immersing the breeders into elevated and

UV-treated seawater within 40~90 min. In such case, another one or doubled procedure of immersing the breeders into seawater of 22~23 °C, 300~1000mwh/L UV-treated for 40~90minutes should be conducted. After that, sufficient gametes will be produced.

4. The method for breeding of a variety of Pacific abalone with orange shell, according to the claim 1, characterized in that the said step 3), the volume of the containers depends on how many breeders it contains. Commonly, the water volume of one breeder in the container is of 10~20L.

5. The method for breeding of a variety of Pacific abalone with orange shell, according to the claim 1, characterized in that the said step 4), the single mating refers to the cross mating between a male and female individual in the same stock.

6. The method for breeding of a variety of Pacific abalone with orange shell, according to the claim 1, characterized in that the said step 4), mass-cross mating refers to random mating among several male and female breeders, which can be of same or similar proportion.

7. The method for breeding of a variety of Pacific abalone with orange shell, according to the claim 1, characterized in that the said step 3), the natural macroalgae here refers to one of *Laminaria japonica*, *Undaria pinnatifida* and *Ulva pertus* or the combination of them.